



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,404	02/06/2006	Masahiko Igarashi	025416-00025	2541

4372 7590 01/14/2009
ARENT FOX LLP
1050 CONNECTICUT AVENUE, N.W.
SUITE 400
WASHINGTON, DC 20036

EXAMINER

GARCIA, ERNESTO

ART UNIT	PAPER NUMBER
----------	--------------

3679

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

01/14/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com
IPMatters@arentfox.com
Patent_Mail@arentfox.com

Office Action Summary	Application No. 10/567,404	Applicant(s) IGARASHI ET AL.	
	Examiner ERNESTO GARCIA	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2008 and 03 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/3/08; 8/19/08; 6/8/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election of Species

Claims 1-10 and 13-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 26, 2008.

Drawings

The drawings were received on March 3, 2008. These drawings are accepted. However, the drawings still contain discrepancies.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22" and "22' " have both been used to designate the same shaft tooth section in Figure 1 and 15.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22b₁" and "22b₂" have both been used to designate the same valley in Figure 1.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22b₅" and "22b₆" have both been used to designate the same valley in Figure 33.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "22a" and "22a' " have both been used to designate the same crowned peak in both Figures 1 and 23.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "28₁" and "28₂" have both been used to designate the same hub tooth section in Figure 1.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "28₅" and "28₆" have both been used to designate the same hub tooth section in Figure 33.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "22" has been used to designate both a shaft with a first

configuration (Figure 3) and another shaft with another configuration (Figure 3; slanted first step region with a smaller angle; page 5, lines 19-21). Note that these shafts are not the same to be designated with the same reference character "22". The simple rule is to designate the same part with the same reference character. Also note that the shaft shanks 24 are different. The one in Figure 3 is slanted while the one in Figure 4 is not. The same applies to Figure 5 with respect to the shaft as this is a different shaft than those found in Figures 3 and 4. The shaft in Figure 5 and Figure 38 is not the same one as shown in Figures 3 and 4 and should be deigned with another reference character. The same applies to the shaft shank shown in Figure 35-37.

The drawings are objected to because reference character "28" in Figure 2A and 2B should be --28₁-- as these figures represent a cross-section of Figure 1 which shows a hub tooth section labeled 28₁. Figures 12-14 are not a representation of the cross-sections shown in Figure 3 since some of the reference characters do not match. In particular, reference characters 28₁ and 22 are inconsistent. The same applies to cross-sections shown in Figures 20-22 and 37-39. Note that the reference characters are not inconsistent. In reviewing Figure 2A and 2B, it is unclear why the splines on the hub are closer together as compared to those in Figure 2A. Figure 2B shows the splines of the hub being closer than those in Figure 2A and thus the examiner questions what is going on with the splines on the hub. Further, the drawings should identify the tooth thickness, in particular, the maximum tooth thickness at a crowning top, as

claimed in claim 5.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The description on the embodiment in Figure 1 in the amended paragraph is incorrect as this figure no longer has reference character 12 or 14. Note that Figure 1

rather shows "12₁" and "14₁".

The description of reference character "22a" is inconsistent. It has been described as a convex peak at page 12, line 23, and a crowned peak at page 20, lines 15-16.

The description of reference character "28a" is inconsistent. It has been described as a convex peak at page 13, lines 16-17, and a straight peak at page 20, lines 16-17.

The new reference character "22b₁" in the amended specification does not reflect amended Figure 3. Note that "b₁" in Figure 3 has been rather subscripted.

Claim Objections

Claim 11 is objected to because of the following informalities:

regarding claim 11, --further-- should be inserted before "comprising" in line 2 as "including" in line 1 is synonymous to "comprising" and thus the mechanism further includes the shaft tooth section and everything that follows line 3, and "constant inside diameters" in line 16 should be --a constant inside diameter-- as the valley and the peak do not have multiple diameters. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have

been made.

Claim Rejections - 35 USC § 112

Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 11, the metes and bounds of the claim is unclear. If the shaft and the hub make up the mechanism, how does both the shaft and hub transmit torque between the shaft and the hub? It seems that the shaft should rather be recited such that the shaft transmits torque to the hub or vice versa and not to itself.

Regarding claim 12, the claim depends from claim 11 and therefore is indefinite.

Claim Rejections - 35 USC § 102

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Beigang, 6,142,033.

Regarding claim 11, Beigang discloses, in Figure 1, a mechanism comprising a shaft **1** and a hub **2**. The shaft **1** has a shaft tooth section **5**. The hub **2** has a hub

Art Unit: 3679

tooth section **7** in engagement with the shaft tooth section **5**. The shaft tooth section **5** has a straight peak **A1** (see marked-up attachment provided in the last Office action) having a constant tooth thickness and a valley **A2** having an outside diameter varying from an end of the shaft **1** toward a shaft shank **4** of the shaft **1**. The valley **A2** has a step region **A3** raised toward the hub tooth section **7** obliquely at a predetermined angle. The hub tooth section **7** has a straight peak **A4** opposing and engaging the valley **A2** of the shaft tooth section **5**. The peak **A4** of the hub tooth section **7** has a constant tooth thickness and a valley **A5**. The peak **A4** of the hub tooth section **7** and the valley **A5** of the hub tooth section **7** have a constant inside diameter from the end of the shaft toward the shaft shank **4** in an axial direction of the shaft **1**.

Regarding claim 12, the step region **A3** has a tilt angle set to a value ranging from 5 degrees to 45 degrees.

Response to Arguments

Applicant's arguments filed March 3, 2008 have been fully considered but they are not persuasive.

With respect to Beigang, applicants argue that the peak and valley do not have a constant inner diameter but rather varies or conforms to the valley of the shaft tooth section and therefore the peak of the hub tooth section is not constant. In response, the

argument has been acknowledged but the analysis is incorrect since the examiner is relying on section L1 to anticipate the language. Accordingly, if one reviews section L1, one would see that both the valley and the peak of the hub are constant at the section L1. Applicants are misinterpreting the section and must believe that the section is the entire hub. Applicants are reminded that the claim calls for a hub section and not an entire hub. Furthermore, it should be noted that claims 11 and 12 are open-ended and therefore other sections are not excluded from being present.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 571-272-7083. The examiner can normally be reached from 9:30AM-6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached at 571-272-7087.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/E. G./

Examiner, Art Unit 3679

January 12, 2009

/Daniel P. Stodola/
Supervisory Patent Examiner, Art Unit 3679